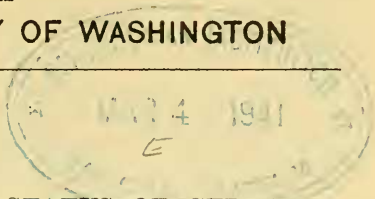


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THE NOMENCLATORIAL STATUS OF CERTAIN
NORTHERN TURRITID MOLLUSKS.

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In a report on the marine mollusks obtained by the naturalists of the Union of Soviet Socialist Republics, in their exploration of the Japanese, Okhotsk, Bering, and Arctic Seas, prepared a couple of years ago, I had occasion to deal with the northern members of the family Turritidae.

The unfortunate war and unsettled conditions in Europe and Asia have held up the publication of this report so far, and I feel that it is very desirable to place the classificatory portion of this report on record.

I therefore here extract the superspecific data dealing with the classification which I proposed for these groups in the manuscript mentioned above.

The groups of northern Turritid mollusks which repose in various collections under the generic designations Bela, Lora, Oenopota, Defrancia, Ishnula, Pleurotomoides, Pleurotomina, Clathurella, Propebela, etc., have had their systematic status built upon a shifting sand foundation, for when critically examined under the rules of modern nomenclature their names are almost all found untenable for the shells to which they have been applied. It is more than likely that when the complete anatomic structure and ontogeny of these northern members will have been revealed, they will prove to represent a distinct supergeneric subdivision of the family Turritidae.

It would seem that every collection made in northern waters, no matter where, has yielded members of this complex, which is greatly diversified in superspecific groups, species, and subspecies. Collections such as rest in the United States National Museum, both recent and fossil, present such a bewildering multitude of forms that an approach to a taxonomic unraveling thereof makes one feel a candidate for the well-known designation of "Fools

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rush in where angels fear to tread," and yet it seems unfair to slight this portion of the large family Turritidae, which embraces more species than any other northern molluscan family. Therefore, craving the indulgence and the sympathy of fellow-workers, I shall venture to offer an arrangement—faulty as the lack of complete anatomic data may eventually prove it to be—which will at least enable museumists and collectors to assemble their material into convenient groups that may in turn be divided into species, subspecies or geographic races.

Before offering a new classification for this group and new designations for unnamed fractions thereof, it becomes necessary to discuss the status of some of the names heretofore applied.

HISTORY.

DEFRANCIA Millet 1827.

Defrancia was created by Millet¹ for five species of Glyphostomoid Turritids: *D. pagoda*, *variabilis*, *hordeacea*, *suturalis* and *milletii*. These were Upper Middle Eocene fossils described from the calcaire grossier of Maine-et-Loire.

Their superficial resemblance to *Propebela* Iredale has caused them to be confused with these. The deep posterior canal, varicially reenforced and denticulated aperture of *Defrancia* should have kept them from this confusion. Related forms are found living in our warmer seas.

The type of *Defrancia* Millet, *Defrancia pagoda* Millet, was designated by Dall in 1908² and 1918.³ The name *Defrancia* Millet, however, was stillborn as it is preoccupied by the earlier *Defrancia* of Brown⁴ for Bryozoa.

PLEUROTOMOIDES Brown 1831.

In 1831 Brown⁵ used the name *Pleurotomoides* as a substitute for Millet's preoccupied *Defrancia* without designation of type. The type, therefore, must be *Defrancia pagoda* Millet, as stated by Dall in 1908 and 1918.

BELA Gray 1847.

This generic name will bring to the mind of the older molluscan students the major portion of the complex here discussed. It is, however, untenable for even a fraction of it, for *Bela* was proposed by Gray⁶ for *B. nebula*, *rufa*, *cranchii*, *minima*, *septangularis* and *attenuata*. The following month, in his paper, "A List of the Genera of Recent Mollusca, their Synonyms and Types,"⁷ he designates *Murex nebula* Mont(agu) as type. The application

¹ 1827. Mem. Soc. Linn. Paris, vol. 5, pp. 437-441, pl. 9.

² 1908. Bull. Mus. Comp. Zool., vol. 43, p. 260.

³ 1918. Proc. U. S. National Museum, vol. 54, p. 320.

⁴ 1825. Syst. urwelt. Pflanzenth., pp. 13 and 42.

⁵ 1831. Italiens Tertiär-Gebilde und deren organische einschlüsse, Heidelberg, p. 47.

⁶ 1847. Ann. Mag. Nat. Hist., vol. 20, p. 270 (October).

⁷ 1847. Proc. Zool. Soc. London, p. 134.

of the name *Bela* to our boreal complex by authors was most unfortunate, for *B. nebula* as well as the rest of the species listed by Gray, are typically Mangelioid.

ISHNULA (Clarke MS.) Gray 1847.

Gray¹ in the place cited has the statement: “? *Mangelia* Risso 1826 f. 30 *Ishnula* Clarke.” As Risso’s figure 30 represents *Mangelia menardiana* Risso, this species becomes the type of *Ishnula* Gray. The type is a fossil from la Trinite.

In 1857 Mörch² introduced an emendation of the name by correctly transliterating it from the Greek, namely, *Ischnula*. The fact that he also cites it as of Clarke, plainly indicates this, although it is not so stated.

The type species, *Mangelia menardiana* Risso, belongs to the Mangelioid complex, not to that of our boreal shells.

PLEUROTOMINA Beck 1847.

In 1847 Beck³ replaces *Defrancia* Millet 1829 with *Pleurotomina*, which he credits to Gray; no type is mentioned. *Pleurotomina* is, therefore, a pure and simple synonym of *Pleurotomoides* Brown 1831, with the same type, that is, *Defrancia pagoda* Millet.

LORA Gistel 1848.

The name *Lora* has been used by various authors to serve in place of *Bela*. It is, however, equally untenable, for Gistel in creating it states: *Defrancia* (Millet, *Gasterop. D. viridula* O. Fabr.); *Lora* M., which means that he had recognized the fact that *Defrancia* Millet 1827 was preoccupied by *Defrancia* Brown 1825, and he rechristened it *Lora*. I suspect that the bracketed portion is a misidentification of *D. viridula* Möller, which he may have thought the same as the earlier Fabrician species, for Möller’s species falls in the popular concept of *Lora*.

The type of *Lora* Gistel must be the same as that of *Defrancia*, i. e., *D. pagoda* Millet as designated by Dall in 1908 and 1918.

OENOPOTA Mörch 1852.

Mörch, in listing the *Pleurotomas* in the Yoldi Catalogue,⁴ uses as one of the subdivisions *Oenopota* and lists under this *O. pleurotomaria* Couth., *pingelli* Bk., *livida* Möll. and *viridula* Möll. (non Fabr.). H. and A. Adams in 1858⁵ use the name “*Onopota* Mörch,” which is plainly an emendation or misquotation. Dall in 1919⁶ designated *Pleurotoma pleurotomaria* as type.

¹ 1847. Proc. Zool. Soc. London, p. 134.

² 1857. (Clarke) Mörch in H. Rink Grönl., vol. 2, Natur. Bird. p. 82.

³ 1847. Verhandl. Gesells. Deut. Naturf. & Urtzte, vol. 24, p. 217.

⁴ 1852. Yoldi Cat., vol. 1, p. 73.

⁵ 1858. Gen. Rec. Moll., vol. 2, p. 654.

⁶ 1919. Proc. U. S. National Museum, vol. 56, p. 40, footnote.

CLATHURELLA Carpenter 1857.

In 1857¹ Carpenter introduced the name Clathurella to replace the pre-occupied Defrancia Millet 1827, and in part Clavatula Hinds.² Carpenter, in the above paper, described Clathurella rava Hinds and *C. aurea* Carpenter, and mentions a number of other species. Cossmann³ in 1896 designates Clavatula rava Hinds² as type.

This name has no bearing upon the northern complex under discussion here, but its relation to Defrancia made it desirable to be quoted.

PROPEBELA Iredale 1918.

This name was proposed by Iredale⁴ for shells typified by *Murex turricula* Montagu. It embraces many of our northern shells.

THE PROPOSED NEW ARRANGEMENT.**OBESOTOMA**, new genus.

= Bela and Lora of authors, in part.

Shell large, rather heavy, ovoid, with inflated whorls which are appressed at the summit and neither angulated nor shouldered, covered with a moderately thick periostracum. Early portion of the nuclear whorls smooth, the succeeding part marked by fine incremental lines and microscopic spiral striations. The axial sculpture of the postnuclear whorls varies from incremental lines to well developed ribs, while the spiral sculpture thereof ranges from absence through microscopic striations to strongly incised lines or even lirations, depending upon the species in question. Aperture large, oval; posterior sinus scarcely indicated; anterior channel profound. Operculum corneous, claw-like, increasing gradually in width, marked by incremental lines and radiating lirations on the early part. The radula has the teeth dagger-shaped, the basal portion corresponding to the hilt.

Type: *Obesotoma japonica*, new species (fig. 11).

Genus OENOPOTA Mörch.

1852. *Oenopota* Mörch, *Yoldi Cat.*, vol. 1, p. 37.

1858. *Oenopota* H. & A. Adams, *Gen. Rec. Moll.*, vol. 2, p. 654.

1919. *Oenopota* Dall, *Proc. U. S. National Museum*, vol. 56, p. 40, footnote type designation.

Shell varying from elongate-ovate to elongate-turritid. Early portion of the nuclear turns smooth, succeeded by a turn or portion thereof having three spiral cords and rather distantly spaced axial ribs, which enclose more or less squarish or rhomboidal pits. The spiral sculpture gradually becomes weakened on succeeding whorls and finally becomes reduced to mere obsolete threads, while the axial ribs become stronger and stronger, usually evanescent on the base. The aperture is pear-shaped, deeply channeled

¹ 1857. *Cat. Reigen Coll. Mazatlan Mollusca*, p. 399.

² 1844. *Zool. Voy. Sulphur*, p. 17.

³ 1896. *Essais de Paleconch. Comp.*, vol. 2, p. 121.

⁴ 1918. *Proc. Malac. Soc. London*, vol. 13, p. 32.

anteriorly with a feeble posterior sinus in the outer lip near or at the summit.

Type: *Oenopota pleurotomaria* Couthouy (fig. 12).

NODOTOMA, new genus.

Shell small, elongate-ovate, covered with a thin periostracum. Nuclear whorls decollated; the postnuclear whorls are rather broadly slopingly shouldered at the summit and crossed by strong, retractively slanting, axial ribs, which are cut into segments by two or three deeply incised spiral lines. Periphery well rounded. Base short, strongly rounded, marked by the continuation of the axial ribs and deeply incised spiral lines which again cut the ribs into segments, but these here are shorter than on the spire. Columella moderately long, almost straight, marked by spiral threads which decrease in size from the insertion of the columella toward the tip. Aperture pear-shaped, strongly channeled anteriorly with a slight sinus in the outer lip at the angle of the shoulder; outer lip thin, rendered somewhat wavy by the spiral sculpture; inner lip reflected over the columella, which it slightly excavates, and also over the parietal wall is similarly treated.

Type: *Nodotoma impressa* (Beck) Mörch. (fig. 2).

FUNITOMA, new genus.

Shell elongate-ovate, covered with a thin periostracum. Nuclear whorls unknown; postnuclear whorls well rounded, appressed at the summit, crossed by somewhat sinuous, strong, retractively slanting axial ribs and low rounded spiral cords. Aperture oval or pear-shaped, decidedly channeled anteriorly; outer lip with a feeble sinus near the summit.

Type: *Funitoma* (*Funitoma*) *areta*, new species (fig. 3).

The genus as here conceived readily breaks up into two subgenera, as follows:

FUNITOMA, new subgenus.

Funitomas in which the spiral cords on the middle whorls are closely spaced and in combination with the axial ribs do not form a netlike pattern.

Type: *Funitoma* (*Funitoma*) *areta*, new species (fig. 8).

CESTOMA, new subgenus.

Funitomas in which the spiral cords on the middle whorls are distantly spaced, forming a netlike pattern in combination with the axial ribs.

Type: *Funitoma* (*Cestoma*) *eurybia*, new species (fig. 5).

GRANOTOMA, new genus.

Nuclear whorls with spiral cords; postnuclear turns with closely spaced axial ribs and deeply incised spiral lines, which cut the ribs so as to render the spaces between the spiral lines finely nodulose. The entire surface of spire and base therefore becomes granose. Columella somewhat twisted.

Type: *Granotoma krausei* (Dall) = *Bela krausei* Dall (fig. 9).

This group extends from the Arctic Sea south over Alaska on the American side and to the Japan Sea along the Asiatic continent.

NEMATOMA, new genus.

Shells of ovate or elongate-ovate outline, covered with a thin periostracum. Nuclear whorls, judging from a fragment present, smooth, well rounded, with the last part of the last turn showing a feeble beginning of the postnuclear sculpture. Postnuclear whorls inflated, strongly rounded with an obsolete angle below the summit, which frequently gives the part between this and the summit a shouldered effect. The postnuclear whorls are marked by axial ribs, which evanesce on the base, and numerous spiral threads which are present on both spire and base. Aperture pear-shaped, decidedly channeled anteriorly with a feeble sinus in the outer lip near its summit.

Type: *Nematoma hokkaidoensis*, new species (fig. 1).

CURTITOMA, new genus.

Shell short, stubby, ovoid. Postnuclear whorls strongly tabulatedly shouldered, but without a keel at the angulation of the shoulder. Axial ribs very strong between the shoulder and periphery, evanescing on the base. The spiral sculpture consists of incised lines on the spire and threads on the columella. Aperture pear-shaped, decidedly channeled anteriorly, with a feeble sinus at the shoulder.

Type: *Curtitoma hecuba*, new species (fig. 3).

VENUSTOMA, new genus.

Shell small, varying in shape from ovate to broadly ovate. The first nuclear turn is smooth, the next shows the beginning of the spiral cords of the postnuclear sculpture. Postnuclear whorls with a roundly sloping shoulder, which extends over almost half of the turns and terminates in a well-marked angulation. The whorls are ornamented by well developed, sigmoid axial ribs and almost equally strong spiral cords, the junction of which produce rounded tubercles. The spiral sculpture of the shoulder is usually weaker and more crowded than that on the rest of the whorls. Suture moderately constricted. Periphery well rounded. Base moderately long, ornamented like the spire, but with the sculpture a little finer. Columella stout, marked by spiral cords and slender axial threads. Aperture pear-shaped, strongly channeled anteriorly, with a weak sinus at the shoulder on the outer lip.

Type: *Venustoma harucoa*, new species (fig. 7).

CANETOMA, new genus.

Shell small, ovate. Nuclear whorls unknown; postnuclear whorls with a strong shoulder which extends over the posterior half of the turns; the anterior termination of the shoulder is marked by a spiral cord which renders the shell decidedly angulated here. The whorls are marked by well developed axial ribs and strong spiral cords that form rounded tubercles at their junction. In addition to this, there are finer spiral lirations and incremental lines that give the spaces between the axial ribs and spiral cords a fine reticulation, the whole producing a basket-like effect. Suture

decidedly constricted. Periphery well rounded. Base rounded, marked by the continuation of the axial ribs, which evanesce here, and spiral cords as well as the finer sculpture mentioned for the spire. Columella short and stout, marked by spiral cords. Aperture pear-shaped, strongly channeled anteriorly and having a feeble posterior sinus at the shoulder.

Type: *Canetoma tersa*, new species (fig. 6).

Genus PROPEBELA Iredale.

1918. *Propebela* Iredale, Proc. Malac. Soc. London, vol. 13, p. 32.

Shell of moderate size, turrited. The early nuclear whorls are smooth, succeeded by a portion that bears weak spiral threads, which rapidly gain strength as they pass to and over the postnuclear turns; the last part of the nuclear whorls also shows fine, feeble, fairly closely spaced, axial riblets, which are best developed on the last part of the nuclear spire. The post-nuclear whorls are broadly slopingly shouldered; the anterior edge of the shoulder is delimited by a strong keel. Both shoulders and the rest of the whorls are marked by axial ribs and spiral cords. The columella is usually slightly twisted and marked with spiral threads. Aperture pear-shaped, decidedly channeled anteriorly, having a shallow posterior sinus at the angulation of the shoulder.

Type: *Propebela turricula* Montagu (fig. 10).

This genus, which contains numerous species, can be divided into two subgenera as follows:

Subgenus PROPEBELA Iredale.

Propebelas with the shoulder of the whorls marked by spiral cords as strong as those found on the rest of the turns.

Type: *Propebela turricula* Montagu (fig. 10).

TURRITOMA, new subgenus.

Propebelas having the spiral sculpture of the shoulder of the whorls much weaker than on the rest of the turns.

Type: *Propebela* (*Turritoma*) *exquisita*, new species (fig. 4).

DESCRIPTION OF THE NEW SPECIES USED AS TYPE FOR THE NEW GENERA AND SUBGENERA HERE DESCRIBED.

Obesotoma japonica, new species.

Plate I, Figure 11.

Shell large, elongate-ovate, rather thin, covered by a thin horn-colored periostracum, which is a little darker near the summit than on the rest of the turn. The early whorls are badly decorticated, the last one only retaining the periostracum, and even here the substance of the shell is badly eaten into in spots. This whorl shows rather poorly, irregularly

developed, axial ribs with fine incremental threads covering them and the spaces between them. In addition to this, the whorl is marked by fine incised spiral lines which are a little finer and more closely spaced near the summit than on the middle of the turn. This type of sculpture continues more or less uniformly to the tip of the columella. The basal portion of the last whorl is rather produced and renders the left outline decidedly concave. Aperture auriculate, posterior sinus very shallow and a little below the summit; anterior sinus deeply channeled; outer lip thin. The substance of the shell of the columella and the parietal wall forming in the labial margin is smooth and undoubtedly sunken into the shell by erosion. Operculum quite small compared to the size of the aperture, thin, corneous, with a decided emargination in its left border a little distance below its posterior extremity, marked by concentric lines of growth and in the early half by fine radiating striations.

The type, U. S. N. M. No. 204967, was dredged by the U. S. Bureau of Fisheries Steamer *Albatross* at Station 4983 in the Japan Sea in 428 fms. on mud bottom; bottom temperature 32.7° F. It has 5 whorls remaining (the extreme tip being lost), which measure: Length, 24.9 mm.; diameter, 12.5 mm. The operculum measures: Length, 7.2 mm.; diameter, 3.6 mm.

The large size, strong spiraled sculpture and the presence of axial ribs will distinguish this from most of the Asiatic species.

Funitoma (*Funitoma*) areta, new species.

Plate I, Figure 8.

Shell of medium size, elongate-ovate, pale chestnut brown. Nuclear whorls partly decorticated, but showing traces of the characteristic sculpture. Postnuclear whorls well rounded, marked by broad, strong, flexuose axial ribs, of which 22 occur on the first and second, 20 on the third and 18 on the last whorl. These ribs are about as wide as the spaces that separate them. They become somewhat enfeebled toward the summit, and evanesce on the base. In addition to the axial ribs, the whorls are marked by six equal and equally spaced spiral striations on the posterior third of the last whorl, while the space between these and the periphery is marked by five strong, low, rounded, rather broad, spiral cords in the interval between which a finer thread is present. Periphery well rounded. Base slightly rounded, marked by the feeble continuations of the axial ribs and four spiral cords and finer threads between them. These are a little less strong than those on the spire. On the stout columella additional spiral threads are present, which grow successively finer and closer spaced from the base to the tip of the columella. Aperture ovate, strongly channeled anteriorly; outer lip thin at the edge with a shallow and rather narrow sinus near the summit; inner lip reflected over and appressed to the columella as a smooth callus which extends up on the parietal wall.

The type, U. S. N. M. No. 428857, was collected by Dr. Derjugin in 1926, at Station 12, in the Japan Sea. It has 6 whorls remaining and measures: Length, 8.5 mm.; diameter, 3.7 mm. Another specimen is in Dr. Derjugin's collection.

Funitoma (Cestoma) eurybia, new species.

Plate I, Figure 5.

Shell small, pale yellow. Nuclear whorls badly eroded; those remaining are marked with five spiral cords which are much narrower than the spaces that separate them. In addition to this, there are numerous slender axial threads which are about half as wide as the spaces that separate them. The combination of spiral cords and axial ribs gives to the nucleus a fenestrated appearance. The postnuclear whorls are quite strongly rounded and marked by a decided angulation about two-fifths of the distance between the summit and the suture, anterior to the summit. The axial ribs are moderately strong, decidedly better developed on the early turns than on the last where they become evanescent. These ribs are flexuose and about one-third as wide as the spaces that separate them. Twenty-two of them are present on the first and second, and 25 on the last turn. In addition, to these axial ribs, fine incremental lines are present on both the ribs and intercostal spaces. The space between the summit and the angulation anterior to it is marked by 12 slender spiral threads which are not all of the same strength or spacing. On the first of the postnuclear turns the junction of the ribs and spiral cord at the angulation forms slender nodules. The second cord about halfway between the angulation and periphery is less strongly nodulose. Another cord is present in the suture. Shortly after the first whorl, a slender spiral thread makes its appearance between the two strong cords and a little later another between the peripheral cord and the one anterior to it. To these additional threads are added as the shell increases in size, so that on the last whorl 5 rather strong cords are present. Two finer threads between the cord at the angulation and the next strong cord anterior to it are present, and an additional spiral thread between that and the next strong cord and likewise the next. So that in reality on the last turn we have five strong spiral cords and four slender threads between the shoulder and the suture. Periphery well rounded. Base moderately convex, marked by fine incremental lines and 7 slender spiral threads, which are equal and equally spaced. The spaces between the stronger lirations of the base are marked by a slender spiral liration. The columella is moderately long and moderately stout, marked by about a dozen subequal spiral threads, which become successively a little closer spaced from the insertion of the columella to its tip. Aperture moderately large, oval, decidedly channeled anteriorly. The channel at the posterior angle is on the shoulder of the whorls and only moderately incised. The inner lip is reflected over and appressed to the base as a smooth callus, which extends also over the parietal wall.

The type, U. S. N. M. No. 428862, was collected by Dr. Derjugin in Soujet Harbor, Japan Sea, in 1928. It has about 5 whorls and measures: Length, 7.4 mm.; diameter, 2.8 mm.

Nematoma hokkaidoensis, new species.

Plate I, Figure 1.

Shell moderately large, subglobose, pale yellow. Early whorls badly eroded; those remaining very strongly inflated and rounded and marked by

very sinuous, slender, poorly developed, distantly spaced axial ribs, of which 24 are present on the last, 21 on the penultimate and 18 on the antepenultimate turn. These ribs grow feeble on the roundly shouldered summit and evanesce shortly after passing the periphery. In addition to the axial ribs, the whorls are marked by slender axial threads, which are very regular and regularly spaced and about as far apart as the threads, and which cover the entire surface of both ribs and intercostal spaces. The spiral sculpture consists of numerous slender threads which render the axial ribs and the fine threads minutely nodulose. Twenty-five of these threads are present between the summit and the periphery on the last whorl. Suture strongly constricted. Periphery inflated, strongly rounded. Base moderately long, strongly rounded, marked by the fine axial threads referred to on the spire and 25 spiral threads. Here, as on the spire, the continuation of these two elements produces minute nodules. The columella is rather slender, short, concave on the left side and marked by 21 fine spiral threads. Aperture pear-shaped, strongly channeled anteriorly with a feeble sinus immediately below the summit; inner lip sinuous, slightly excavating the columella, which is also the case on the parietal wall.

The type, U. S. N. M. No. 204951, was dredged by the U. S. Bureau of Fisheries Steamer *Albatross* at Station 5036, off the southeastern Hokkaido in 464 fms. on brown mud bottom; bottom temperature 37.9°. It has 5.3 whorls remaining, and measures: Length, 9.3 mm.; diameter, 5.3 mm.

***Curtitoma hecuba*, new species.**

Plate I, Figure 3.

Shell small, flesh colored. Nuclear whorls badly eroded, but showing traces of spiral liration. Postnuclear whorls with a moderately broad tabulated shoulder at the summit and strong broad rounded, protractively slanting, axial ribs which extend from the shoulder to the base, gradually weakening toward this and evanescing shortly after reaching it. There are 18 of these ribs on the second and third postnuclear whorls and 20 on the last. These ribs at their summit weakly crenulate the whorls at the angulation. The spiral sculpture is absent on the shoulder. Anterior to the shoulder, there is a moderately strong incised line followed by 3 very feeble lines which in turn are followed by 3 considerably stronger. These 7 lines do not divide the space between the shoulder and the periphery into equal segments. The periphery is well rounded. The base is short and marked by 9 slender incised spiral lines, the spaces between which are also of varying width. The columella is quite short and heavy and somewhat flexed, marked by slender spiral threads which grow successively finer from its insertion to the tip. Aperture rather broad, decidedly channeled anteriorly with the posterior sinus narrow and at the shoulder. Outer lip thin; inner lip somewhat flexed, reflected over and appressed to the base as a polished callus which also extends over the parietal wall.

The type, U. S. N. M. 428871, was collected by Dr. Derjugin in the Japan Sea in 1926. It has a little more than 5 whorls remaining and measures: Length, 6.0 mm.; diameter, 3.4 mm.

U. S. N. M. No. 428872, contains another specimen from the same lot, while two additional ones are in the collection of Dr. Derjugin.

Venustoma harucoa, new species.

Plate I, Figure 7.

Shell small, ovoid, cream colored. Nuclear whorls decollated, only the last one remaining, which is well rounded and smooth, excepting the last portion, which shows the beginning of the postnuclear sculpture. Postnuclear whorls inflated, strongly rounded with a decided angle on the middle of the turns marking the anterior termination of the shoulder, and appressed at the summit, crossed by decidedly sigmoid, rather slender, axial ribs which extend from the summit to the posterior portion of the columella, which become less strong on the base. Of these ribs there are 23 on the first, 19 on the second, 28 on the third and 34 on the fourth whorl. The spaces between the summit and the anterior tuberculated angle of the shoulder are marked by four slender cords, which render the axial ribs at their junction slightly nodulose. The space between the periphery and the angulated shoulder is marked by 3 spiral cords, which are as strong as that forming the angle of the shoulder, and of which the anterior one marks the periphery. Between the shoulder and the next cord and between the periphery and the cord posterior to it, another slender spiral cord is present. All these cords render the axial ribs feebly nodulose. Base short, well rounded, marked by 4 equal and equally spaced, spiral cords which correspond in strength to those on the spire. Here the axial ribs are very slender and the nodulations therefore less strongly expressed. Columella somewhat concave on the left border, moderately stout, marked by 8 equal and equally spaced spiral cords, the spaces that separate them being a little wider than the cords. Aperture ovate, strongly channeled anteriorly with a moderately deep sinus on the outer lip at the shoulder; inner lip appressed to the columella as a thin callus, which extends up on the parietal wall.

The type, U. S. N. M. 428874, is part of the Edward Morse Collection, and is labeled "Japan Seas," without specific locality. It has a little more than 6 whorls remaining and measures: Length, 6.5 mm.; diameter, 3.5 mm.

U. S. N. M. No. 227179 contains 2 additional specimens from the same source.

Canetoma tersa, new species.

Plate I, Figure 6.

Shell small, white. Nuclear whorls badly eroded but showing traces of spiral sculpture; postnuclear whorls decidedly angulated at the shoulder, marked by rather slender axial ribs, of which 14 occur on the third and 16 on the last whorl. In addition to the axial ribs, the early postnuclear whorls are marked by two strong spiral cords which equal the axial ribs in strength. The first of these is at the angle of the shoulder and the second a little posterior to the periphery. These cords render the axial ribs nodulose at their junction, while the spaces enclosed between them are squarish shallow

pits, marked by fine incremental lines and very fine spiral striations. On the last turn, 3 slender spiral threads are present on the shoulder, and another spiral thread appears between the two strong cords referred to above, anterior to the shoulder, while a fourth slender cord marks the periphery. Base well rounded, marked on the posterior portion by the feeble continuation of the axial ribs and six low, somewhat flattish, spiral cords, which are about half as wide as the spaces that separate them. Columella short, only moderately stout, somewhat twisted and marked by five feeble spiral cords. Aperture moderately large, decidedly channeled anteriorly, with a shallow posterior sinus at the shoulder of the whorls; outer lip thin at the edge; inner lip somewhat flexuose, reflected over and appressed to the base as a smooth callus, which also extends on the parietal wall.

The type, U. S. N. M. No. 428877, was collected by Dr. Derjugin in 1926, in the Japan Sea. It has a little more than 5 whorls remaining and measures: Length, 7.0 mm.; diameter, 4.0 mm.

Two additional specimens are in Dr. Derjugin's collection.

***Propebela (Turritoma) exquisita*, new species.**

Plate I, Figure 4.

Shell small, ovoid, decidedly turritid, cream yellow with a faint flush of brown on the shoulder, covered with a thin periostracum. Nuclear whorls 1.6, strongly rounded, rather high, forming a rather pointed apex, smooth, excepting incremental lines and the beginning of the spiral sculpture on the last portion of the last turn as slender threads. Postnuclear whorls with a very broad sloping shoulder which terminates anteriorly in a lamellar keel, and extends over the posterior two-fifths of the turns. Anterior to the keel the whorls are slightly rounded; the postnuclear whorls are marked by strong narrow axial ribs, of which 14 occur on the first three, 15 on the fourth and 16 on the last half turn; these ribs are considerably less strong on the shoulder than on the rest of the spire. They also evanesce before reaching the columella on the last turn. The sloping shoulder bears about 10 ill-defined spiral threads and numerous, closely spaced, microscopic spiral striations. The junctions of the axial ribs and the strong cord at the shoulder form knoblike prominent tubercles. On the early whorls the keel at the shoulder is simple; on the last turn it is partly divided by an impressed line. The space between the shoulder and the periphery is marked by four strong spiral cords, which are equal and almost equally spaced; however, the space between the shoulder and the first of these cords is about double the width of the rest. Suture strongly constricted. Base well rounded, marked by the gradually diminishing ribs and 7 spiral cords which equal those between the keel and suture in strength. Wherever these spiral cords between the periphery and columella cross the axial ribs, they render these feebly nodulose. Columella moderately long, somewhat twisted, moderately stout, marked by 11 spiral threads, which decrease in size and spacing from the posterior toward the tip. The columella, as well as the rest of the shell, is also marked by fine lines of growth. Aperture

